



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/507,270	02/18/2000	Edward Ellis Eibling	07007.00013	8023

30594 7590 04/17/2003

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER

DEPPE, BETSY LEE

ART UNIT	PAPER NUMBER
----------	--------------

2634

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

3

Office Action Summary	Application No.	Applicant(s)
	09/507,270	EIBLING ET AL. (Q)
	Examiner Betsy L. Deppe	Art Unit 2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-9 is/are rejected.
- 7) Claim(s) 10-20 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 February 2000 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. The abstract of the disclosure is objected to because it describes the result or effect of the method instead of the method itself. It does not include the steps of the method or the apparatus for implementing the method. Correction is required. See MPEP § 608.01(b).

Art Unit: 2634

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not provide proper antecedent basis for the equations in claims 14, 16 and 18. Furthermore, the specification does not appear to provide proper antecedent basis for the limitations recited in claim 13, lines 12-13.

4. The disclosure is objected to because of the following informalities:

on page 3, line 17, " $(2^{x-1} - 1)$ " should be " $(2^{x-1} - 1)/\text{peak voltage}$ " (see page 3, line 16 and claim 10);

on page 7, line 17, " $2^{(12-1)}-1$ " in the equation should be " $(2^{(12-1)}-1)$ " for clarity;

on page 8, line 3, "desired digital gain 2.76" should be "for desired digital gain scaling factor 2.76" (see page 7, line 20); and

on page 8, line 6, "the allowed analog gain reduction" should be "the closest allowed analog gain reduction" in order to be consistent with page 8, line 3.

Appropriate correction is required.

Claim Objections

5. The claims are objected to because of the following informalities:

in claim 1, line 2, "front" should be inserted before both occurrences of "end" in order to be consistent with line 1;

in claim 3, line 1, both occurrences of "said" should be "a";

in claim 6, line 4, "a" should be inserted before "digital gain";

in claim 10, line 2, "x bit" should be "x-bit";

in claims 11, 13, 18 and 20, the Examiner suggests replacing the quotes with parenthesis (for example, in claim 11, line 8, change "e" to (e));

in claim 11, line 7, "computed maximum expected values" should be "maximum expected value" (see claim 11, line 5);

in claim 14, line 1, "said maximum expected values" should be "said maximum expected values of said I and Q components" in order to be consistent with claim 12, line 3;

in claim 18, line 1, "the current" should be "a current"; and

in claim 19, "the actual" should be "an actual".

Appropriate correction is required.

6. Claim 15 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 15 appears to include the same limitation as claim 12 since both claims refer to a calculation of a maximum expected value for the I and Q components.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1, 3, and 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Mandyam (US Patent No. 6,535,564 B1).

9. With regard to claims 1, 3 and 5, Figure 1 of Mandyam discloses the claimed invention including a first and second multiplier (108 and 110) in the digital data stream before the a first and second digital-to-analog converter (114 and 112) wherein the transmitter is a Code Division Multiple Access transmitter. (See column 2, lines 27-48 and 51-52 and column 3, line 21 – column 5, line 2) Although Mandyam does not explicitly disclose a multiplier for scaling the digital signal, it is implicit that scaling is

achieved by multiplication since it teaches rescaling the analog signal by multiplication (see column 2, line 43-48 and column 6, lines 52-54)

10. With regard to claims 6 and 7, Mandyam discloses the claimed invention including applying a digital gain to the I component and Q component of a signal (108 and 110), converting the signal with the digital gain into analog form (114 and 112) and transmitting it. (See column 2, lines 27-48 and 51-52 and column 3, line 21 – column 5, line 2)

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 4, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandyam as applied to claims 1 and 6 above, and further in view of Yang (US Patent No. 6,504,862 B1). Mandyam discloses the claimed invention except for a peak-to-rms ratio reducer for constraining the signal peaks of the signal with the digital gain.

Figures 1 and 2 of Yang disclose using a peak-to-rms ratio reducer (i.e. error shaped BF clipper 10) to constrain the signal peaks of a CDMA signal. (See column 1, lines 12-15; column 2, lines 26-57) It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the peak-to-rms ratio reducer disclosed by Yang after the adaptive scaler in Mandyam in order to ensure that the

Art Unit: 2634

scaled signal is not distorted after amplification by the power amplifier. If the amplitude of the scaled signal exceeds the linear domain of the power amplifier, the power amplifier generates a distorted output signal thereby introducing noise and affecting the accuracy of data recovery. By adding a peak-to-rms ratio reducer, the transmitter will not transmit a distorted signal thereby enabling more accurate data recovery.

Allowable Subject Matter

13. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claims 11-20 are allowable over prior art.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (703) 305-4960. The examiner can normally be reached on Monday - Wednesday (8:30-4:00).
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Betsy L. Deppe
Primary Examiner
Art Unit 2634
April 15, 2003